Snow Specks

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Few phenomena are as perfect as fresh snow: it is pure and white, it is smooth and peaceful, it protects the soil below against the harsh cold of winter, and it is oh-so fleeting. Freshly fallen snow rarely stays smooth and white; critters walk across or through it, trees drop twigs, branches, and other debris. Don't despair; some of the specks that litter the snow are worth a closer look.

White, or paper, birches are colonizers of open soil. By looking for their seeds in winter, it is easy to see why and how they colonize so successfully. Birch seeds develop in tiny cone-like bundles called catkins. These catkins and their seeds develop during the growing season, but they aren't released until winter. The trefoil, or three pronged bract, is similar to the hard plate of a cone. As in a cone, that hard part helps to protect the seed during development. The actual seed is smaller and much lighter. Again, as is true with the seeds associated with cones, birch seeds have wing-like membranes that help to carry the seeds far away from the parent tree. If you look carefully on the surface of snow, or in the picture below, you can see both the bracts and seeds. These speckles on the snow are signs of things to come, if the seed lands on a suitable place to grow.

This photo shows the remains of a white birch catkin in the upper left corner, bracts at the top, and the pencil is pointing to a seed.

photo from botit.botany.wisc.edu

Another cool snow speck to observe is the snow flea, with a length of 1-2 millimeters. These insects are present year-round, but in winter they become really easy to see, especially when they gather in large groups. Snow fleas are not really fleas; they belong to the springtail family. They are decomposers, eating bits of plant debris or tree sap, not animals. They are most easily seen on warm winter days at the base of trees. They look like tiny dark specks, but these specks move, a lot. Their tails are spring-loaded. When the lock is released, the energy in the tail causes the snow fleas to spring up by a few inches. Their movements are random, so when watching them, sometimes it is fun just to blur one's vision to see all the activity.

Snow fleas are able to remain active in winter due to natural, protein-rich anti-freeze. Scientists at Queens University in Canada have been studying the anti-freeze in hopes that it will enable longer storage times for transplanting human organs. According to an October 21, 2005 article in www.physorg.com/news7456.html, organs for transplant must be kept at the freezing point or slightly higher. If the organ can be stored at a cooler temperature, it can be preserved for a longer period of time. Once in the recipient's body, the organ warms and the anti-freeze breaks down quickly. The patient can then eliminate the protein and reduce the risk of antibody development.

snow fleas photo from www.cjclandandseaphoto.com